CHAPTER 27
ELECTRICAL

SECTION 2701
GENERAL

2701.1 Scope. This chapter governs the electrical components, equipment and systems used in buildings and structures covered by this code. Electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of the ICC *Electrical Code*.

Note: As defined in s. Comm 62.0202 (1) (c), "ICC Electrical Code" means ch. Comm 16.

[F] SECTION 2702
EMERGENCY AND STANDBY POWER SYSTEMS

2702.1 Installation. Emergency and standby power systems shall be installed in accordance with the ICC *Electrical Code*, NFPA 110 and NFPA 111.

2702.2 Where required. Emergency and standby power systems shall be provided where required by Sections 2702.2.1 through 2702.2.19.

2702.2.1 Group A occupancies. Emergency power shall be provided for voice communication systems in Group A occupancies in accordance with Section 907.2.1.2.

2702.2.2 Smoke control systems. Standby power shall be provided for smoke control systems in accordance with Section 909.11.

2702.2.3 Exit signs. Emergency power shall be provided for exit signs in accordance with Section 1003.2.10.5.

2702.2.4 Means of egress illumination. Emergency power shall be provided for means of egress illumination in accordance with Section 1003.2.11.2

2702.2.5 Accessible means of egress elevators. Standby power shall be provided for elevators that are part of an accessible means of egress in accordance with Section 1003.2.13.3.

2702.2.6 Horizontal sliding doors. Standby power shall be provided for horizontal sliding doors in accordance with Section 1003.3.1.3.3.

2702.2.7 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities in accordance with Section 415.9.10

2702.2.8 Membrane structures. Standby power shall be provided for auxiliary inflation systems in accordance with Section 3102.8.2. Emergency power shall be provided for exit signs in temporary tents and membrane structures in accordance with the *International Fire Code*.

2702.2.9 Hazardous materials. Emergency or standby power shall be provided in occupancies with hazardous materials in accordance with Section 414.5.4.

2702.2.10 Highly toxic and toxic materials. Emergency power shall be provided for occupancies with highly toxic or toxic materials in accordance with the *International Fire Code*.

2702.2.11 Organic peroxides. Standby power shall be provided for occupancies with silane gas in accordance with the *International Fire Code*.

2702.2.12 Pyrophoric materials. Emergency power shall be provided for occupancies with silane gas in accordance with the *International Fire Code*.

2702.2.13 Covered mall buildings. Covered mall buildings exceeding 50,000 square feet (4645 m^2) shall be provided with standby power systems which are capable of operating the emergency voice/alarm communication.

2702.2.14 High-rise buildings. Emergency and standby power shall be provided in high-rise buildings in accordance with Chapter 27 and for the items listed below:

1. Fire command center.
2. Fire pumps.
3. Emergency voice/alarm communication systems.
4. Lighting for mechanical equipment rooms.
5. Elevators.

2702.2.15 Underground buildings. Emergency and standby power shall be provided in underground buildings in accordance with Sections 405.9 and 405.10.

2702.2.16 Group I-3 occupancies. Emergency power shall be provided for doors in Group I-3 occupancies in accordance with Section 408.4.2.

2702.2.17 Airport traffic control towers. Standby power shall be provided in airport traffic control towers in accordance with Section 412.1.5.

2702.2.18 Elevators. Standby power for elevators shall be provided as set forth in Section 3003.1.

2702.2.19 Smokeproof enclosures. Standby power shall be provided for smokeproof enclosures as required by Section 909.20.

2702.3 Maintenance. Emergency and standby power systems shall be maintained and tested in accordance with the *International Fire Code*.

CHAPTER 29
PLUMBING SYSTEMS

SECTION 2901
GENERAL

2901.1 Scope. The provisions of this chapter and the *International Plumbing Code* shall govern the erection, installation, alteration, repairs, relocation, replacement addition to, use or maintenance of plumbing equipment and systems. Plumbing systems and equipment shall be constructed, installed and maintained in accordance with the *International Plumbing Code*. Private sewage disposal systems shall conform to the *International Private Sewage Disposal Code*.

Note: As defined in s. Comm 62.0202 (1) (h) and (i), "IPC and International Plumbing Code" and "IPSDC and International Private Sewage Disposal Code" mean chs. Comm 81 to 87.

Comm 62.2900 Additional criteria for toilets.

(1) Maintenance. Every toilet room and every part thereof shall be kept clean and in good repair.

(2) Service sink. In every building where a service sink is required by IBC Table 2902.1, the service sink shall be located in a service closet or room that is provided with the supplies necessary for the sanitary upkeep of the toilet rooms.

(3) Permanent and portable outdoor toilets.

(a) General. Where local conditions or situations make it impractical to install a private onsite wastewater treatment system, permanent or portable outdoor toilets, or other sanitation systems or devices as described in ch. Comm 91, may be used, except as specified in par. (b).

Note: See ch. Comm 83 for detailed requirements for private onsite wastewater treatment systems.

(b) Exception: For places of employment for more than 10 persons, schools larger than two rooms, and apartment houses, water-flush toilets shall be provided, unless outdoor toilets or other sanitation systems or devices are permitted in writing by the department.

(c) Permanent outdoor toilets. Permanent outdoor toilets, consisting of composting toilet systems, incinerating toilets, or privies shall comply with ch. Comm 91, s. Comm 62.1209, and this section.

1. A permanent outdoor toilet shall be provided with a suitable approach, such as a concrete, gravel, or cinder walk.
2. All windows, ventilators, and other openings for permanent outdoor toilets shall be screened to prevent the entrance of flies, and all doors shall be self-closing.

(d) Portable outdoor toilets.

1. No portable outdoor toilet may be erected or maintained within 50 feet (15 240 mm) of any well; within 10 feet (3048 mm) of the line of any street or public thoroughfare, unless vehicular traffic has been detoured while the portable toilet is in use; within 5 feet (1524 mm) of the property line between premises; or within 25 feet (7620 mm) of a door, window, or other outdoor opening of any building.
2. A portable outdoor toilet shall be stabilized to prevent it from tipping over.
3. A portable outdoor toilet shall be located with an approach such that access is unobstructed and free of brush, debris, and standing water.

Note: Chapter Comm 91 contains requirements for storage chambers of portable toilets.

Note: Chapters NR 113 and NR 114 contain requirements for servicing portable toilets.

(4) Enclosure of fixtures.

(a) Water closets and urinals within a toilet room shall be arranged to ensure privacy. Except as provided in par. (b), each water closet shall occupy a separate compartment, with walls or partitions and a door enclosing the fixtures to ensure privacy. Urinals shall be placed against walls at least 6 feet 8 inches (2032 mm) high and arranged individually with or without partitions.

(b) 1. Water closet compartments may be omitted in a single-occupant toilet room having a door with a privacy lock.

2. Toilet rooms located in day-care and child-care facilities and containing two or more water closets may have one water closet without an enclosing compartment.

[P] SECTION 2902
MINIMUM PLUMBING FACILITIES

2902.1 Minimum number of fixtures. Plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table 2902.1 Types of occupancies not shown in Table 2902.1 shall be considered individually by the building official. The number of occupants shall be determined by this code. Occupancy classification shall be determined in accordance with Chapter 3.

Comm 62.2902 (1) Exception: Where more than one water closet is required for males, urinals may be substituted for up to 50 percent of the required number of water closets.

Note: Additional plumbing fixtures may be required for employees by the U.S. Department of Labor, occupational safety and health act (OSHA) regulations.

Note: Additional plumbing fixtures may be required by the Wisconsin Department of Health and Family Services for restaurants, mobile home parks, camping grounds, camping resorts, recreational camps and educational camps.

Note: Chapter Comm 90 also has requirements for minimum numbers of sanitary fixtures for a public swimming pool, as based on the pool area. For some buildings, the minimum number of sanitary fixtures determined in that manner may be larger than the minimum number determined in accordance with this section. Compliance with this section does not relieve an owner from complying with ch. Comm 90.

Comm 62.2902 (2) Lavatories for toilet rooms. At least one lavatory shall be provided in each toilet room or in a gender-designated lounge adjacent to the toilet room. If a multiple-use lavatory is provided, 24 lineal inches (610 mm) of wash sink, or 20 inches (508 mm) measured along the edge of a circular basin will be considered equivalent to one lavatory.

2902.2 [Comm 62.2902 (3)] Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex. Toilet rooms shall be designated by legible signs.

Exceptions:

1. Separate facilities shall not be required for private facilities.
2. Separate employee facilities shall not be required in occupancies in which 15 or fewer people are employed.
3. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or less.

Note: Additional plumbing fixtures may be required by the Wisconsin Department of Health and Family Services for restaurants, mobile home parks, camping grounds, camping resorts, recreational camps and educational camps. [Comm 62.2902 (1) (b)]

Note: Chapter Comm 90 also has requirements for minimum numbers of sanitary fixtures for a public swimming pool, as based on the pool area. For some buildings, the minimum number of sanitary fixtures determined in that manner may be larger than the minimum number determined in accordance with this section. Compliance with this section does not relieve an owner from complying with ch. Comm 90. [Comm 62.2902 (1) (b)]

2902.3 Number of occupants of each sex. The required water closets, lavatories, and showers or bathtubs shall be distributed equally between the sexes based on the percentage of each sex anticipated in the occupant load. The occupant load shall be composed of 50 percent of each sex, unless statistical data approved by the code official indicate a different distribution of the sexes.

2902.4 Location of employee toilet facilities in occupancies other than assembly or mercantile. Access to toilet facilities in occupancies other than mercantile and assembly occupancies shall be from within the employees' working area. Employee facilities shall be either separate facilities or combined employee and public facilities.

Exception: Facilities that are required for employees in storage structures or kiosks, and are located in adjacent structures under the same ownership, lease or control, shall be a maximum travel distance of 500 feet (152 m) from the employees' regular working area.

2902.4.1 Travel distance. The required toilet facilities in occupancies other than assembly or mercantile shall be located not more than one story above or below the employee's working area and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

Exception: The location and maximum travel distances to the required employee toilet facilities in factory and industrial occupancies are permitted to exceed that required in Section 2902.4.1, provided the location and maximum travel distances are approved by the code official.

2902.5 Location of employee toilet facilities in mercantile and assembly occupancies. Employees shall be provided with toilet facilities in buildings and tenant spaces utilized as restaurants, nightclubs, places of public assembly and mercantile occupancies. The employee facilities shall be either separate facilities or combined employee and public customer facilities. The required toilet facilities shall be located not more than one story above or below the employee's regular work area and the path of travel to such facilities, in other than covered malls, shall not exceed a distance of 500 feet (152 m). The path of travel to required facilities in covered malls shall not exceed a distance of 300 feet (91 440 mm).

Exception: Employee toilet facilities shall not be required in tenant spaces where the travel distance from the main entrance of the tenant space to a central toilet area does not exceed 300 feet (91 440 mm) and such central toilet facilities are located not more than one story above or below the tenant space.

2902.6 Public facilities. Customers, patrons and visitors shall be provided with public toilet facilities in structures and tenant spaces intended for public utilization. Public toilet facilities shall be located not more than one story above or below the space required to be provided with public toilet facilities and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

Comm 62.2902 (4) Alternative public facilities. Toilet rooms may be omitted in a small retail or mercantile building where all of the following requirements are met:

(a) No more than 25 occupants are accommodated.

(b) Other restrooms are conveniently located and available to the patrons and employees during all hours of operation.

(c) The omission is approved in writing by the local unit of government.

(d) A copy of the written approval from the local unit of government is provided to the department or its authorized representative upon request.

Comm 62.2902 (5) Note: Additional location requirements for restaurant toilet rooms may be applied by the Wisconsin Department of Health and Family Services.

Comm 62.2902 (6) Mercantile toilet rooms. Toilet rooms for customers in business and mercantile occupancies shall be directly accessible to the customers, rather than accessible through employee work areas.

2902.6.1 Covered malls. In covered mall buildings, the path of travel to required toilet facilities shall not exceed a distance of 300 feet (91 440 mm). The required facilities shall be based on total square footage, and facilities shall be installed in each individual store or in a central toilet area located in accordance with this section. The maximum travel distance to the central toilet facilities in covered mall buildings shall be measured from the main entrance of any store or tenant space.

2902.6.2 [Comm 62.2902 (7)] Pay facilities. All toilet facilities shall be free of charge.

Comm 62.2902(7) Note: Section 146.085, Wisconsin Stats., prohibits charging a fee for the use of toilet facilities and imposes a fine of $10 to $50 for violations.

TABLE 2902.1
MINIMUM NUMBER OF PLUMBING FACILITIES[a]

OCCUPANCY		WATER CLOSETS [see s. Comm 62.2902 (1) for urinals] Male	WATER CLOSETS [see s. Comm 62.2902 (1) for urinals] Female	LAVATORIES	BATHTUBS/ SHOWERS	DRINKING FOUNTAINS (see the *International Plumbing Code*)	OTHERS
	Nightclubs	1 per 40	1 per 40	1 per 75	—	1 per 500	1 service sink
ASSEMBLY	Restaurants	1 per 75	1 per 75	1 per 200	—	1 per 500	1 service sink
	Theaters, halls, museums, etc.	1 per 125	1 per 65	1 per 200	—	1 per 500	1 service sink
	Coliseums, arenas (less than 3,000 seats)	1 per 75	1 per 40	1 per 150	—	1 per 1,000	1 service sink
	Coliseums, arenas (3,000 seats or greater)	1 per 120	1 per 60	Male 1 per 200 Female 1 per 150	—	1 per 1,000	1 service sink
	Churches[b]	1 per 150	1 per 75	1 per 200	—	1 per 1,000	1 service sink
	Stadiums (less than 3,000 seats), pools, etc.	1 per 100	1 per 50	1 per 150	—	1 per 1,000	1 service sink
	Stadiums (3,000 seats or greater)	1 per 150	1 per 75	Male 1 per 200 Female 1 per 150	—	1 per 1,000	1 service sink
Mercantile (see Sections 2902.2, 2902.5, 2902.6)		1 per 500		1 per 750	—	1 per 1,000	1 service sink
Business (see Sections 2902.2, 2902.4, 2902.4.1)		1 per 50		1 per 80	—	1 per 100	1 service sink
Educational		1 per 50		1 per 50	—	1 per 100	1 service sink
Factory and industrial		1 per 100		1 per 100	See the *International Plumbing Code*	1 per 400	1 service sink
Passenger terminals and transportation facilities		1 per 500		1 per 750	—	1 per 1,000	1 service sink

(continued)

TABLE 2902.1—continued
MINIMUM NUMBER OF PLUMBING FACILITIES[a]

OCCUPANCY		WATER CLOSETS [see s. Comm 62.2902 (1) for urinals] Male	WATER CLOSETS [see s. Comm 62.2902 (1) for urinals] Female	LAVATORIES	BATHTUBS/ SHOWERS	DRINKING FOUNTAINS (see the *International Plumbing Code*)	OTHERS
INSTITUTIONAL	Residential care	1 per 10		1 per 10	1 per 8	1 per 100	1 service sink
	Hospitals, ambulatory nursing patients[c]	1 per room[d]		1 per room[d]	1 per 15	1 per 100	1 service sink per floor
	Day nurseries, sanitariums, non-ambulatory nursing home patients, etc.[c]	1 per 15		1 per 15	1 per 15[e]	1 per 100	1 service sink
	Employees, other than residential care[c]	1 per 25		1 per 35	—	1 per 100	—
	Visitors, other than residential care	1 per 75		1 per 100	—	1 per 500	—
	Prisons[c]	1 per cell		1 per cell	1 per 15	1 per 100	1 service sink
	Asylums, reformatories, etc.[c]	1 per 15		1 per 15	1 per 15	1 per 100	1 service sink
RESIDENTIAL	Hotels, motels	1 per guestroom		1 per guestroom	1 per guestroom	—	1 service sink
	Lodges	1 per 10		1 per 10	1 per 8	1 per 100	1 service sink
	Multiple Family	1 per dwelling unit		1 per dwelling unit	1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
	Dormitories	1 per 10		1 per 10	1 per 8	1 per 100	1 service sink
	One- and two-family dwellings	1 per dwelling unit		1 per dwelling unit	1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit[f]
Storage (See Sections 2902.2 and 2902.4)		1 per 100		1 per 100	See the *International Plumbing Code*	1 per 1,000	1 service sink

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.
b. Fixtures located in adjacent buildings under the ownership or control of the church shall be made available during periods the church is occupied.
c. Toilet facilities for employees shall be separate from facilities for inmates or patients.
d. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient rooms shall be permitted where such room is provided with direct access from each patient room and with provisions for privacy.
e. For day nurseries, a maximum of one bathtub shall be required.
f. For attached one- and two-family dwellings, one automatic clothes washer connection shall be required per 20 dwelling units.

CHAPTER 30
ELEVATORS AND CONVEYING SYSTEMS

SECTION 3001
GENERAL

3001.1 [Comm 62.3001 (1)] Scope. This chapter governs the design, construction, installation, alteration and repair of elevators, dumbwaiters, escalators, moving walks and their components.

3001.2 [Comm 62.3001 (2)] Referenced standards. Except as otherwise provided for in this code, the design, construction, installation, alteration, repair and maintenance of elevators, dumbwaiters, escalators, moving walks and their components shall comply with ch. Comm 18.

3001.3 Accessibility. Passenger elevators required to be accessible by Chapter 11 shall conform to ICC A117.1.

3001.4 [Comm 62.3001 (3)] Change in use. A change in use of an elevator from freight to passenger, passenger to freight, or from one freight class to another freight class shall comply with ch. Comm 18.

SECTION 3002
HOISTWAY ENCLOSURES

3002.1 Hoistway enclosure protection. Elevator, dumbwaiter and other hoistway enclosures shall have a fire-resistance rating not less than that specified in Chapter 6 and shall be constructed in accordance with Chapter 7.

3002.1.1 Opening protectives. Openings in hoistway enclosures shall be protected as required in Chapter 7.

3002.1.2 Hardware. Hardware on opening protectives shall be of an approved type installed as tested, except that approved interlocks, mechanical locks and electric contacts, door and gate electric contacts, and door-operating mechanisms shall be exempt from the fire test requirements.

3002.2 Number of elevator cars in a hoistway. Where four or more elevator cars serve all or the same portion of a building, the elevators shall be located in at least two separate hoistways. Not more than four elevator cars shall be located in any single hoistway enclosure.

3002.3 Emergency signs. An approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. The sign shall read: IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS. The emergency sign shall not be required for elevators that are part of an accessible means of egress complying with Section 1003.2.13.3.

3002.4 [Comm 62.3002] Elevator car to accommodate ambulance stretcher. At least one elevator shall be provided for fire department emergency access to all floors in all buildings four stories in height or more, and, regardless of the number of stories, in all outpatient clinics specified in IBC Section 304.1 and in all nursing homes and hospitals as specified in IBC Section 308.3. Such elevator car shall be of such a size and arrangement to accommodate a 24-inch by 76-inch (610 mm by 1930 mm) ambulance stretcher in the horizontal, open position and shall be identified by the international symbol for emergency medical services, which is the star of life. The symbol shall not be less than 3 inches (76 mm) high and shall be placed inside on both sides of the hoistway door frame.

3002.5 Emergency doors. Where an elevator is installed in a single blind hoistway or on the outside of a building, there shall be installed in the blind portion of the hoistway or blank face of the building, an emergency door in accordance with ASME A17.1.

3002.6 Prohibited doors. Doors, other than hoistway doors and the elevator car door, shall be prohibited at the point of access to an elevator car unless such doors are readily openable from the car side without a key, tool, special knowledge or effort.

3002.7 Common enclosure with stairway. Elevators shall not be in a common shaft enclosure with a stairway.

[F] SECTION 3003
EMERGENCY OPERATIONS

3003.1 Standby power. In buildings and structures where standby power is required or furnished to operate an elevator, the operation shall be in accordance with Section 3003.1.1 through 3003.1.4.

3003.1.1 Manual transfer. Standby power shall be manually transferable to all elevators in each bank.

3003.1.2 One elevator. Where only one elevator is installed, the elevator shall automatically transfer to standby power within 60 seconds after failure of normal power.

3003.1.3 Two or more elevators. Where two or more elevators are controlled by a common operating system, all elevators shall automatically transfer to standby power within 60 seconds after failure of normal power where the standby power source is of sufficient capacity to operate all elevators at the same time. Where the standby power source is not of sufficient capacity to operate all elevators at the same time, all elevators shall transfer to standby power in sequence, return to the designated landing and disconnect from the standby power source. After all elevators have been returned to the designated level, at least one elevator shall remain operable from the standby power source.

3003.1.4 Venting. Where standby power is connected to elevators, the machine room ventilation or air conditioning shall be connected to the standby power source.

3003.2 Fire-fighters' emergency operation. Elevators shall be provided with Phase I emergency recall operation and Phase II emergency in-car operation in accordance with ASME A17.1.

SECTION 3004
HOISTWAY VENTING

3004.1 Vents required. Hoistways of elevators and dumbwaiters penetrating more than three stories shall be provided with a means for venting smoke and hot gases to the outer air in case of fire.

Exceptions:

1. In occupancies of other than Groups R-1, R-2, I-1, I-2 and similar occupancies with overnight sleeping quarters, venting of hoistways is not required where the building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Sidewalk elevator hoistways are not required to be vented.

3004.2 Location of vents. Vents shall be located below the floor or floors at the top of the hoistway, and shall open either directly to the outer air or through noncombustible ducts to the outer air. Noncombustible ducts shall be permitted to pass through the elevator machine room provided that portions of the ducts located outside the hoistway or machine room are enclosed by construction having not less than the fire protection rating required for the hoistway. Holes in the machine room floors for the passage of ropes, cables or other moving elevator equipment shall be limited so as not to provide greater than 2 inches (51 mm) of clearance on all sides.

3004.3 Area of vents. Except as provided for in Section 3004.3.1, the area of the vents shall not be less than $3^1/_2$ percent of the area of the hoistway nor less than 3 square feet (0.28 m^2) for each elevator car, and not less than $3^1/_2$ percent nor less than 0.5 square foot (0.047 m^2) for each dumbwaiter car in the hoistway, whichever is greater. Of the total required vent area, not less than one-third shall be of the permanently open type unless all vents activate upon detection of smoke from any of the elevator lobby smoke detectors.

Comm 62.3004 (1) Vent guards. A ventilation opening in a hoistway wall, where provided, shall have guards securely anchored to the supporting structure inside the hoistway. The guards shall consist of a wire-mesh screen of at least 0.0915-inch-diameter steel wire with openings that will reject a ball 1-inch (25.4 mm) in diameter, or expanded metal screen of equivalent strength and open area.

3004.3.1 Reduced vent area. Where mechanical ventilation conforming to the *International Mechanical Code* is provided, a reduction in the required vent area is allowed provided that all of the following conditions are met:

1. The occupancy is not in Group R-1, R-2, I-1 or I-2 or of a similar occupancy with overnight sleeping quarters.
2. The vents required by Section 3004.2 do not have outside exposure.
3. The hoistway does not extend to the top of the building.
4. The hoistway and machine room exhaust fan is automatically reactivated by thermostatic means.
5. Equivalent venting of the hoistway is accomplished.

3004.4 Closed vents. Closed portions of the required vent area shall consist of windows or duct openings glazed with annealed glass not more than 0.125 inch (3.2 mm) thick.

3004.5 [Comm 62.3004 (2)] Plumbing and mechanical systems.

(a) General. Except as specified in par. (b), plumbing and mechanical systems shall not be located in an elevator shaft.

(b) Elevator pits. Drains or sumps complying with ss. Comm 82.33 and 82.36 shall be provided in elevator pits. Connection of these drains and sumps to a sanitary system is prohibited.

SECTION 3005
CONVEYING SYSTEMS

3005.1 General. Escalators, moving walks, conveyors, personnel hoists and material hoists shall comply with the provisions of this section.

3005.2 Escalators and moving walks. Escalators and moving walks shall be constructed of approved noncombustible and fire-retardant materials. This requirement shall not apply to electrical equipment, wiring, wheels, handrails and the use of $^1/_{28}$-inch (0.9 mm) wood veneers on balustrades backed up with noncombustible materials.

3005.2.1 Enclosure. Escalator floor openings shall be enclosed except where Exception 2 of Section 707.2 is satisfied.

3005.3 Conveyors. Conveyors and conveying systems shall comply with ASME B20.1.

3005.3.1 Enclosure. Conveyors and related equipment connecting successive floors or levels shall be enclosed with fire barrier walls and approved opening protectives complying with the requirements of Section 3002 and Chapter 7.

3005.3.2 Conveyor safeties. Power-operated conveyors, belts and other material-moving devices shall be equipped with automatic limit switches which will shut off the power in an emergency and automatically stop all operation of the device.

3005.4 Personnel and material hoists. Personnel and material hoists shall be designed utilizing an approved method that accounts for the conditions imposed during the intended operation of the hoist device. The design shall include, but is not limited to, anticipated loads, structural stability, impact, vibration, stresses and seismic restraint. The design shall account for the construction, installation, operation and inspection of the hoist tower, car, machinery and control equipment, guide members and hoisting mechanism. Additionally, the design of personnel hoists shall include provisions for field testing and maintenance which will demonstrate that the hoist device functions in accordance with the design. Field tests shall be conducted upon the completion of an installation or following a major alteration of a personnel hoist.

SECTION 3006
MACHINE ROOMS

3006.1 Access. An approved means of access shall be provided to elevator machine rooms and overhead machinery spaces.

Comm 62.3006 (1) Note: See ch. Comm 18 for additional machine room access requirements.

3006.2 Venting. Elevator machine rooms that contain solid-state equipment for elevator operation shall be provided with an independent ventilation or air- conditioning system to protect against the overheating of the electrical equipment. The system shall be capable of maintaining temperatures within the range established for the elevator equipment.

3006.3 Pressurization. The elevator machine room serving a pressurized elevator hoistway shall be pressurized upon activation of a heat or smoke detector located in the elevator machine room.

Comm 62.3006 (2) Exception: An elevator machine room which serves a pressurized elevator hoistway and which is not directly connected to the pressurized elevator shaft is not required to be pressurized.

3006.4 Machine rooms and machinery spaces. Elevator machine rooms and machinery spaces shall be enclosed with construction having a fire-resistance rating not less than the required rating of the hoistway enclosure served by the machinery. Openings shall be protected with assemblies having a fireresistance rating not less than that required for the hoistway enclosure doors.

3006.5 Shunt trip. Where elevator hoistways or elevator machine rooms containing elevator control equipment are protected with automatic sprinklers, a means installed in accordance with NFPA 72, Section 3-8.15, Elevator Shutdown, shall be provided to disconnect automatically the main line power supply to the affected elevator prior to the application of water. This means shall not be self-resetting. The activation of sprinklers outside the hoistway or machine room shall not disconnect the main line power supply.

3006.6 [Comm 62.3006 (3)] Plumbing systems. Plumbing systems not used in connection with the operation of the elevator may not be located in elevator equipment rooms.

CHAPTER 31
SPECIAL CONSTRUCTION

SECTION 3101
GENERAL

3101.1 Scope. Provisions of this chapter shall govern special building construction including membrane structures, temporary structures, pedestrian walkways and tunnels, awnings and canopies, marquees, signs, and towers and antennas.

Comm 62.3100

(1) Assembly seating facilities. Every bleacher, grandstand, or other assembly seating facility that is intended primarily to support persons for the purpose of spectator seating shall be inspected at least annually. Any loose connections and any defective or broken members shall be repaired before the facility is used. All repairs and maintenance shall conform with this code.

(2) Public mausoleums. Public mausoleum structures shall be designed, constructed and maintained in accordance with this code. Mausoleums shall be classified as a Group S-1 storage occupancy and shall be constructed of reinforced concrete or other materials of similar durability.

Note: Section 157.12 (2) (d), Wisconsin Stats., reads as follows: "A mausoleum shall be constructed to last as long as possible, taking into consideration the technology and economics applicable to mausoleum construction at the time of construction."

SECTION 3102
MEMBRANE STRUCTURES

3102.1 General. The provisions of this section shall apply to air-supported, air-inflated, membrane-covered cable and membrane-covered frame structures, collectively known as membrane structures, erected for a period of 180 days or longer. Those erected for a shorter period of time shall comply with the *International Fire Code*. Membrane structures covering water storage facilities, water clarifiers, water treatment plants, sewage treatment plants, greenhouses and similar facilities not used for human occupancy, are required to meet only the requirements of Sections 3102.3.1 and 3102.7.

3102.2 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein:

AIR-INFLATED STRUCTURE. A building where the shape of the structure is maintained by air pressurization of cells or tubes to form a barrel vault over the usable area. Occupants of such a structure do not occupy the pressurized area used to support the structure.

AIR-SUPPORTED STRUCTURE. A building wherein the shape of the structure is attained by air pressure and occupants of the structure are within the elevated pressure area. Air-supported structures are of two basic types:

Double skin. Similar to a single skin, but with an attached liner that is separated from the outer skin and provides an air space which serves for insulation, acoustic, aesthetic or similar purposes.

Single skin. Where there is only the single outer skin and the air pressure is directly against that skin.

CABLE-RESTRAINED, AIR-SUPPORTED STRUCTURE. A structure in which the uplift is resisted by cables or webbings which are anchored to either foundations or dead men. Reinforcing cable or webbing is attached by various methods to the membrane or is an integral part of the membrane. This is not a cable-supported structure.

MEMBRANE-COVERED CABLE STRUCTURE. A nonpressurized structure in which a mast and cable system provides support and tension to the membrane weather barrier and the membrane imparts structural stability to the structure.

MEMBRANE-COVERED FRAME STRUCTURE. A nonpressurized building wherein the structure is composed of a rigid framework to support a tensioned membrane which provides the weather barrier.

NONCOMBUSTIBLE MEMBRANE STRUCTURE. A membrane structure in which the membrane and all component parts of the structure are noncombustible.

3102.3 Type of construction. Noncombustible membrane structures shall be classified as Type IIB construction. Noncombustible frame or cable-supported structures covered by an approved membrane in accordance with Section 3102.3.1 shall be classified as Type IIB construction. Heavy timber frame-supported structures covered by an approved membrane in accordance with Section 3102.3.1 shall be classified as Type IV construction. Other membrane structures shall be classified as Type V construction.

Exception: Plastic less than 30 feet (9144 mm) above any floor used in greenhouses, where occupancy by the general public is not authorized, and for aquaculture pond covers, is not required to be flame-resistant.

3102.3.1 Membrane and interior liner material. Membranes and interior liners shall be either noncombustible as set forth in Section 703.4, or flame-resistant as determined in accordance with NFPA 701 and the manufacturer's test protocol.

Exception: Plastic less than 20 mil (500 mm) in thickness used in greenhouses, where occupancy by the general public is not authorized, and for aquaculture pond covers, is not required to be flame resistant.

3102.4 Allowable floor areas. The area of a membrane structure shall not exceed the limitations set forth in Table 503, except as provided in Section 506.

3102.5 Maximum height. Membrane structures shall not exceed one story nor shall such structures exceed the height limitations in feet set forth in Table 503.

Exception: Noncombustible membrane structures serving as roofs only.

3102.6 Mixed construction. Membrane structures shall be permitted to be utilized as specified in this section as a portion of buildings of other types of construction. Height and area limits shall be as specified for the type of construction and occupancy of the building.

3102.6.1 Noncombustible membrane. A noncombustible membrane shall be permitted for use as the roof or as a skylight of any building or atrium of a building of any type of construction provided it is at least 20 feet (6096 mm) above any floor, balcony or gallery.

3102.6.1.1 Flame-resistant membrane. A flame-resistant membrane shall be permitted to be used as the roof or as a skylight on buildings of Types IIB, III, IV and V construction provided it is at least 20 feet (6096 mm) above any floor, balcony or gallery.

3102.7 Engineering design. The structure shall be designed and constructed to sustain dead loads; loads due to tension or inflation; live loads including wind, snow or flood; and seismic loads and in accordance with Chapter 16.

3102.8 Inflation systems. Air-supported and air-inflated structures shall be provided with primary and auxiliary inflation systems to meet the minimum requirements of Sections 3102.8.1 through 3102.8.3.

3102.8.1 Equipment requirements. This inflation system shall consist of one or more blowers and shall include provisions for automatic control to maintain the required inflation pressures. The system shall be so designed as to prevent over-pressurization of the system.

3102.8.1.1 Auxiliary inflation system. In addition to the primary inflation system, in buildings exceeding 1,500 square feet (140 m^2) in area, an auxiliary inflation system shall be provided with sufficient capacity to maintain the inflation of the structure in case of primary system failure. The auxiliary inflation system shall operate automatically when there is a loss of internal pressure and when the primary blower system becomes inoperative.

3102.8.1.2 [Comm 62.3102] Blower equipment. Blower equipment shall meet the following requirements:

1. Blowers shall be powered by continuous-rated motors at the maximum power required for any flow condition as required by the structural design.
2. Blowers shall be provided with inlet screens, belt guards and other protective devices as required to provide protection from injury.
3. Blowers shall be housed within a weather-protecting structure.
4. Blowers shall be equipped with back draft check dampers to minimize air loss when inoperative.
5. Blower inlet shall be located to provide protection from air contamination. The location of inlets shall be approved.

3102.8.2 Standby power. Wherever an auxiliary inflation system is required, an approved standby power-generating system shall be provided. The system shall be equipped with a suitable means for automatically starting the generator set upon failure of the normal electrical service and for automatic transfer and operation of all of the required electrical functions at full power within 60 seconds of such service failure. Standby power shall be capable of operating independently for a minimum of 4 hours.

3102.8.3 Support provisions. A system capable of supporting the membrane in the event of deflation shall be provided for in air-supported and air-inflated structures having an occupant load of more than 50 or where covering a swimming pool regardless of occupant load. The support system shall be capable of maintaining membrane structures used as a roof for Type I construction not less than 20 feet (6096 mm) above floor or seating areas. The support system shall be capable of maintaining other membranes at least 7 feet (2134 mm) above the floor, seating area or surface of the water.

SECTION 3103
TEMPORARY STRUCTURES

3103.1 General. The provisions of this section shall apply to structures erected for a period of less than 180 days. Tents and other membrane structures erected for a period of less than 180 days shall comply with the *International Fire Code*. Those erected for a longer period of time shall comply with applicable sections of this code.

Exception: Provisions of the *International Fire Code* shall apply to tents and membrane structures erected for a period of less than 180 days.

3103.1.1 Permit required. Temporary structures that cover an area in excess of 120 square feet (11.16 m^2), including connecting areas or spaces with a common means of egress or entrance which are used or intended to be used for the gathering together of ten or more persons, shall not be erected, operated or maintained for any purpose without obtaining a permit from the building official.

Comm 62.3103 Local requirements. Under IBC Sections 3103.1.1 and 3103.2, the requirements for permits and construction documents for temporary structures are at the option of the local code official.

3103.2 Construction documents. A permit application and construction documents shall be submitted for each installation of a temporary structure. The construction documents shall include a site plan indicating the location of the temporary structure and information delineating the means of egress and the occupant load.

3103.3 Location. Temporary structures shall be located in accordance with the requirements of Table 602 based on the fire-resistance-rating of the exterior walls for the proposed type of construction.

3103.4 Means of egress. Temporary structures shall conform to the means of egress requirements of Chapter 10 and shall have a maximum exit access travel distance of 100 feet (30 480 mm).

SECTION 3104
PEDESTRIAN WALKWAYS AND TUNNELS

3104.1 General. This section shall apply to connections between buildings such as pedestrian walkways or tunnels, located at, above, or below grade level, that are used as a means of travel by persons. The pedestrian walkway shall not contribute to the building area or the number of stories or height of connected buildings.

3104.2 [Comm 62.3104 (1)] Separate structures. Buildings that are connected in accordance with IBC Section 3104 shall be considered to be separate structures.

3104.3 Construction. The pedestrian walkway shall be of noncombustible construction.

Exception: Combustible construction shall be permitted where connected buildings are of combustible construction.

3104.4 Deleted.

3104.5 Fire barriers between pedestrian walkways and buildings. Walkways shall be separated from the interior of the building by fire barrier walls with a fire-resistance rating of not less than 2 hours. This protection shall extend vertically from a point 10 feet (3048 mm) above the walkway roof surface or the connected building roof line, whichever is lower, down to a point 10 feet (3048 mm) below the walkway and horizontally 10 feet (3048 mm) from each side of the pedestrian walkway. Openings within the l0-foot (3048 mm) horizontal extension of the protected walls beyond the walkway shall be equipped with devices providing a $^3/_4$-hour fire protection rating in accordance with Section 714.

Exception: The walls separating the pedestrian walkway from a connected building are not required to have a fireresistance rating by this section where any of the following conditions exist:

1. The distance between the connected buildings is more than 10 feet (3048 mm), the pedestrian walkway and connected buildings are equipped throughout with an automatic sprinkler system in accordance with NFPA 13, and the wall is constructed of a tempered, wired or laminated glass wall and doors subject to the following:
   1.1. The glass shall be protected by an automatic sprinkler system in accordance with NFPA 13 and the sprinkler system shall completely wet the entire surface of interior sides of the glass wall when actuated.
   1.2. The glass shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler operates.
   1.3. Obstructions shall not be installed between the sprinkler heads and the glass.
2. The distance between the connected buildings is more than 10 feet (3048 mm), and both side walls of the pedestrian walkway are at least 50 percent open with the open area uniformly distributed to prevent the accumulation of smoke and toxic gases.
3. Buildings are on the same lot, in accordance with Section 503.1.3.
4. Where exterior walls of connected buildings are required by Section 704 to have a fire-resistance rating greater than 2 hours, the walkway shall be equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.

The previous exceptions shall apply to pedestrian walkways having a maximum height above grade of three stories or 40 feet (l2 192 mm), or five stories or 55 feet (16 764 mm) where sprinklered. The minimum height above grade shall be 8 feet (2438 mm).

3104.6 Public way. Pedestrian walkways over a public way shall also comply with Chapter 32.

3104.7 Egress. Access shall be provided at all times to a pedestrian walkway that serves as a required exit.

3104.8 Width. The unobstructed width of pedestrian walkways shall not be less than 36 inches (914 mm). The total width shall not exceed 30 feet (9144 mm).

3104.9 Exit access travel. The length of exit access travel shall not exceed 200 feet (60 960 mm).

Exceptions:

1. Exit access travel distance on a pedestrian walkway equipped throughout with an automatic sprinkler system in accordance with NFPA 13 shall not exceed 250 feet (76 200 mm).
2. Exit access travel distance on a pedestrian walkway constructed with both sides at least 50 percent open shall not exceed 300 feet (91 440 mm).
3. Exit access travel distance on a pedestrian walkway constructed with both sides at least 50 percent open, and equipped throughout with an automatic sprinkler system in accordance with NFPA 13, shall not exceed 400 feet (122 m).

3104.10 Tunneled walkway. Separation between the tunneled walkway and the building to which it is connected shall not be less than 2-hour fire-resistant construction and openings therein shall be protected in accordance with Table 714.2.

3104.11 Ventilation. Smoke and heat venting shall be provided for enclosed walkways and tunneled walkways. Such venting shall be in accordance with NFPA 204 or other accepted engineering practice.

SECTION 3105
AWNINGS AND CANOPIES

3105.1 General. Awnings or canopies shall comply with the requirements of this section and other applicable sections of this code.

3105.2 Design and construction. Awnings and canopies shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. Awnings shall have frames of noncombustible material, fire-retardant-treated wood, wood of Type IV sizes, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

3105.3 Canopy materials. Canopies shall be constructed of a rigid framework with an approved covering, that is flame resistant in accordance with NFPA 701 or that has a flame spread rating not greater than 25 when tested in accordance with ASTM E 84.

SECTION 3106
MARQUEES

3106.1 General. Marquees shall comply with this section and other applicable sections of this code.

3106.2 Thickness. The maximum height or thickness of a marquee measured vertically from its lowest to its highest point shall not exceed 3 feet (914 mm) where the marquee projects more than two-thirds of the distance from the property line to the curb line, and shall not exceed 9 feet (2743 mm) where the marquee is less than two-thirds of the distance from the property line to the curb line.

3106.3 Roof construction. Where the roof or any part thereof is a skylight, the skylight shall comply with the requirements of Chapter 24. Every roof and skylight of a marquee shall be sloped to down spouts that shall conduct any drainage from the marquee in such a manner so as not to spill over the sidewalk.

3106.4 Location prohibited. Every marquee shall be so located as not to interfere with the operation of any exterior standpipe, and such that the marquee does not obstruct the clear passage of stairways or exit discharge from the building or the installation or maintenance of street lighting.

3106.5 Construction. A marquee shall be supported entirely from the building and constructed of noncombustible materials. Marquees shall be designed as required in Chapter 16. Structural members shall be protected to prevent deterioration.

SECTION 3107
SIGNS

3107.1 General. Signs shall be designed, constructed and maintained in accordance with this code.

SECTION 3108
RADIO AND TELEVISION TOWERS

3108.1 General. Subject to the provisions of Chapter 16 and the requirements of Chapter 15 governing the fire-resistance-ratings of buildings for the support of roof structures, radio and television towers shall be designed and constructed as herein provided.

3108.2 Location and access. Towers shall be located and equipped with step bolts and ladders so as to provide ready access for inspection purposes. Guy wires or other accessories shall not cross or encroach upon any street or other public space, or over above-ground electric utility lines, or encroach upon any privately owned property without written consent of the owner of the encroached-upon property, space or above-ground electric utility lines.

3108.3 Construction. Towers shall be constructed of approved corrosion-resistant noncombustible material. The minimum type of construction of isolated radio towers not more than 100 feet (30 480 mm) in height shall be Type IIB.

3108.4 Loads. Towers shall be designed to resist wind loads in accordance with EIA/TIA 222-E. Consideration shall be given to conditions involving wind load on ice-covered sections in localities subject to sustained freezing temperatures.

3108.4.1 Dead load. Towers shall be designed for the dead load plus the ice load in regions where ice formation occurs.

3108.4.2 Wind load. Adequate foundations and anchorage shall be provided to resist two times the calculated wind load.

3108.5 Grounding. Towers shall be permanently and effectively grounded.

SECTION 3109
SWIMMING POOL ENCLOSURES

Comm 62.3109 Note: See ch. Comm 90 for requirements for swimming pool enclosures.

CHAPTER 33
SAFEGUARDS DURING CONSTRUCTION

SECTION 3301
GENERAL
Deleted

SECTION 3302
CONSTRUCTION SAFEGUARDS

3302.1 Remodeling and additions. Required exits, existing structural elements, fire protection devices and sanitary safeguards shall be maintained at all times during remodeling, alterations, repairs or additions to any building or structure.

Exceptions:

1. When such required elements or devices are being remodeled, altered or repaired, adequate substitute provisions shall be made.
2. When the existing building is not occupied.

3302.2 Deleted.

SECTION 3303
DEMOLITION

3303.1 - 3303.4 Deleted.

3303.5 Water accumulation. Provision shall be made to prevent the accumulation of water or damage to any foundations on the premises or the adjoining property.

3303.6 Deleted.

SECTIONS 3304 - 3306
Deleted

SECTION 3307
PROTECTION OF ADJOINING PROPERTY

Comm 62.3307 Note: Sections 101.111 (1) to (6), Wisconsin Stats., read as follows:

(1) DEFINITION. In this section 'excavator' means any owner of an interest in land making or causing to be made an excavation.

(2) CAVE-IN-PREVENTION. Any excavator shall protect the excavation site in such a manner so as to prevent the soil of adjoining property from caving in or settling.

(3) LIABILITY FOR UNDERPINNING AND FOUNDATION EXTENSIONS.

(a) If the excavation is made to a depth of 12 feet (3658 mm) or less below grade, the excavator may not be held liable for the expense of any necessary underpinning or extension of the foundations of buildings on adjoining properties.

(b) If the excavation is made to a depth in excess of 12 feet (3658 mm) below grade, the excavator shall be liable for the expense of any necessary underpinning or extension of the foundations of any adjoining buildings below the depth of 12 feet (3658 mm) below grade. The owners of adjoining buildings shall be liable for the expense of any necessary underpinning or extension of the foundations of their buildings to the depth of 12 feet (3658 mm) below grade.

(4) NOTICE. Unless waived by adjoining owners, at least 30 days prior to commencing the excavation the excavator shall notify, in writing, all owners of adjoining buildings of his or her intention to excavate. The notice shall state that adjoining buildings may require permanent protection. The owners of adjoining property shall have access to the excavation site for the purpose of protecting their buildings.

(5) EMPLOYEES NOT LIABLE. No worker who is an employee of an excavator may be held liable for his or her employer's failure to comply with this section.

(6) FAILURE TO COMPLY; INJUNCTION. If any excavator fails to comply with this section, any aggrieved person may commence an action to obtain an order under ch. 813 directing such excavator to comply with this section and restraining the excavator from further violation thereof. If the aggrieved person prevails in the action, he or she shall be reimbursed for all his or her costs and disbursements together with such actual attorney fees as may be approved by the court."

SECTIONS 3308 - 3312
Deleted

CHAPTER 34
EXISTING STRUCTURES

Comm 62.3400 (2) Community-based residential facilities serving 20 or fewer unrelated residents. Where an existing building or portion thereof is converted to a community-based residential facility serving 20 or fewer residents who are not related to the operator or administrator, the building or portion thereof shall be classified as Group R-4. The building or portion thereof shall comply with the provisions of this code that are applicable to a Group R-4 occupancy.

SECTIONS 3401 - 3405
Deleted

SECTION 3406
HISTORIC BUILDINGS

3406.1 [Comm 62.3406] Historic buildings. The construction, repair, alteration, addition, restoration, movement, and change of occupancy of historic buildings shall comply with ch. Comm 70.

SECTION 3407
MOVED STRUCTURES
Deleted

SECTION 3408
ACCESSIBILITY FOR EXISTING BUILDINGS

3408.1 [Comm 62.3408 (1)] Scope.

(a) General. Except as specified in par. (b), the requirements in Sections 3408.2 to 3408.7.14 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.

(b) Exception: When dwelling units are remodeled in housing with three or more dwelling units, the dwelling units shall comply with sub. (4). The term "remodeled" has the meaning given in s. 101.132 (1) (h), Stats., and the term "housing" has the meaning given in s. 106.50 (1) (L), Stats.

Note: Under section 101.132 (1) (h), Wisconsin Stats., "remodel" means to substantially improve, alter, extend or otherwise change the structure of a building or change the location of exits, but does not include maintenance, redecoration, reroofing or alteration of mechanical or electrical systems.

Note: Under section 106.50 (1) (L), Wisconsin Stats., "housing" means any improved property, or any portion thereof, including a mobile home as defined in s. 66.0435 (1) (d) or condominium, that is used or occupied, or is intended , arranged or designed to be used or occupied, as a home or residence. "Housing" includes any vacant land that is offered for sale or rent for the construction or location thereon of any building, structure or portion thereof that is used or occupied, or is intended, arranged or designed to be used or occupied, as a home or residence.

3408.2 Maintenance of facilities. A building, facility or element that is constructed or altered to be accessible shall be maintained accessible during occupancy.

3408.3 [Comm 62.3408 (2)] Change of occupancy.

(a) General. Except as specified in par. (b), existing buildings, or portions thereof, that undergo a change of group or occupancy shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.
3. Signage complying with s. Comm 62.1110.
4. Accessible parking, where parking is provided.
5. At least one accessible passenger loading zone, when loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

(b) Exception. Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, the items specified in subds. 1. to 6. shall conform to the requirements to the maximum extent technically feasible. Change of group or occupancy that incorporates any alterations or additions shall comply with par. (a), subs. (3) and (4), and IBC Sections 3408.4, 3408.5, 3408.6 and 3407.

3408.4 Additions. Provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of primary function, shall comply with the requirements in Section 3408.6 for accessible routes.

3408.5 [Comm 62.3408 (3)] Alterations.

(a) General. A building, facility or element that is altered shall comply with the applicable provisions in ss. Comm 62.1100 to 62.1110 and ICC/ANSI A117.1, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

(b) Exceptions.

1. The altered element or space is not required to be on an accessible route, unless required by IBC Section 3408.6.
2. Accessible means of egress required by IBC Chapter 10 are not required to be provided in existing buildings or facilities.

3408.5.1 Extent of application. An alteration of an existing element, space, or area of a building or facility shall not impose a requirement for greater accessibility than that which would be required for new construction.

Alterations shall not reduce or have the effect of reducing accessibility of a building, portion of a building, or facility.

Comm 62.3408 (4) Accessibility requirements for remodeled housing.

(a) Remodeled housing. When housing with three or more dwelling units is remodeled, the remodeling percentages specified in s. 101.132 (2) (b), Stats., shall be applied, and the remodeling shall comply with the applicable portions of ch. Comm 62.

Note: Section 101.132 (2) (b), Wisconsin Stats., reads as follows:

1. If more than 50 percent of the interior square footage of any housing with 3 or more dwelling units is to be remodeled, the entire housing shall conform to the standards in par. (a), regardless of when the housing was first intended for occupancy.
2. If 25 percent to 50 percent of the interior square footage of any housing with three or more dwelling units is to be remodeled, that part of the housing that is to be remodeled shall conform to the standards in par. (a), regardless of when the housing was first intended for occupancy.
3. If less than 25 percent of the interior square footage of any housing with three or more dwelling units is to be remodeled, the remodeling is not subject to the standards in par. (a) unless the alteration involves work on doors, entrances, exits or toilet rooms, in which case the doors, entrances, exits or toilet rooms shall conform to the standards in par. (a) regardless of when the housing was first intended for occupancy.

(b) Remodeled buildings with multiple occupancies.

1. Except as specified in subd. 2., if a building that has multiple occupancies including housing with three or more dwelling units is remodeled, an accessible route shall be provided to the remodeled dwelling units.
2. An accessible route to the remodeled area is not required, if the cost to provide the accessible route exceeds 20 percent of the cost of the alteration, as specified in IBC Section 3408.6.

3408.6 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities or drinking fountains serving the area of primary function.

Exceptions:

1. The cost of providing the accessible route is not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire-protection systems, and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of an existing building, facility or element.

3408.7 Scoping for alterations. The provisions of Section 3408.7.1 through 3408.7.14 shall apply to alterations to existing buildings and facilities.

3408.7.1 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

3408.7.2 [Comm 62.3408 (5)] Platform lifts. Platform lifts complying with ICC/ANSI A117.1 and ch. Comm 18 shall be permitted as a component of an accessible route.

3408.7.3 Stairs and escalators in existing buildings. In alterations where an escalator or stair is added where none existed previously, an accessible route shall be provided in accordance with Sections 1104.4 and 1104.5.

3408.7.4 Ramps. Where steeper slopes than allowed by Section 1003.3.4.1 are necessitated by space limitations, the slope of ramps in or providing access to existing buildings or facilities shall comply with Table 3408.7.4.

TABLE 3408.7.4
RAMPS

SLOPE	MAXIMUM RISE
Steeper than 1:10 but not steeper than 1:8	3 inches
Steeper than 1:12 but not steeper than 1:10	6 inches

For SI: 1 inch = 25.4 mm.

3408.7.5 Dining areas. An accessible route to raised or sunken dining areas, or to outdoor seating areas is not required provided that the same services and decor are provided in an accessible space usable by any occupant and not restricted to use by people with a disability.

3408.7.6 Performance areas. Where it is technically infeasible to alter performance areas to be on an accessible route, at least one of each type of performance area shall be made accessible.

3408.7.7 Assembly areas. Seating shall adjoin an accessible route that also serves as a means of egress. Where it is technically infeasible to disperse accessible seating throughout an altered assembly area, the minimum required number of wheelchair space clusters shall be one-half of that required by Section 1107.2.2.1. In existing assembly seating areas with a mezzanine, where the main level provides three-fourths or more of the total seating capacity, wheelchair space clusters are permitted to be dispersed on the main level. Each accessible seating area shall have provisions for companion seating.

3408.7.8 Sleeping rooms and accommodations. Where I-1 sleeping rooms, I-2 sleeping rooms or patient rooms, I-3 residential units, or R-1 and R-2 sleeping accommodations are being altered or added, the requirements of Section 1107 for accessible rooms and Chapter 9 for accessible alarms apply only to the quantity of spaces being altered or added.

3408.7.9 Toilet rooms. Where it is technically infeasible to alter existing toilet and bathing facilities to be accessible, an accessible unisex toilet or bathing facility is permitted. The unisex facility shall be located on the same floor and in the same area as the existing facilities.

3408.7.10 Dressing, fitting and locker rooms. Where it is technically infeasible to provide accessible dressing, fitting or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be pro-

vided. Where separate sex facilities are provided, accessible rooms for each sex shall be provided. Separate sex facilities are not required where only unisex rooms are provided.

3408.7.11 Check-out aisles. Where check-out aisles are altered in facilities having a selling space of 5,000 square feet (465 m^2) or more, at least one check-out aisle serving each function shall be made accessible.

3408.7.12 Dispersion of seating at fixed or built-in tables, counters, or work surfaces. Accessible seating at fixed or built-in tables, counters or work surfaces shall be distributed throughout the space or facility as much as technically feasible.

3408.7.13 Sales and service counters. Where it is technically infeasible for existing counters for sales or distribution of goods or services to be made accessible, an accessible auxiliary counter shall be provided.

3408.7.14 Thresholds. The maximum height of thresholds at doorways shall be $^3/_4$ inch (19.1 mm). Such threshold shall have beveled edges on each side.

3408.8 Historic buildings. These provisions shall apply to buildings and facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, ramps, entrances or toilet facilities would threaten or destroy the historic significance of the building or facility, as determined by the authority having jurisdiction, the alternative requirements of Section 3408.8.1 through 3408.8.5 for that element shall be permitted.

3408.8.1 Site arrival points. At least one accessible route from a site arrival point to an accessible entrance shall be provided.

3408.8.2 Multilevel buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

3408.8.3 Entrances. At least one main entrance shall be accessible.

Exception: If a main entrance cannot be made accessible, an employee or service entrance that is unlocked while the building is occupied shall be made accessible.

The accessible entrance shall have a notification system or be provided with remote monitoring.

3408.8.4 [Comm 62.3408 (6)] Toilet and bathing facilities. Where toilet rooms are provided, at least one accessible toilet room complying with s. Comm 62.1109 (2) (c) shall be provided.

3408.8.5 Ramps. The slope of a ramp run of 24 inches (610 mm) maximum shall not be steeper than one unit vertical in eight units horizontal (12-percent slope).

Comm 62.3408 (7) Definition. TECHNICALLY INFEASIBLE. An alteration of a building or a facility that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a loadbearing member that is an essential part of the structural frame, or because other existing physical or site constraints prohibit modification or addition of elements, spaces or features that are in full and strict compliance with the minimum requirements for new construction and which are necessary to provide accessibility.

SECTION 3409
COMPLIANCE ALTERNATIVES
Deleted

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Standard reference number	Title	Referenced in code section number
A 36M—97a	Specification for Carbon Structural Steel	1808.3.1, 2103.11.5
A 82—97a	Specification for Steel Wire, Plain, for Concrete Reinforcement	2103.11.5
A 153M—95	Specification for Zinc Coating (Hot-dip) on Iron and Steel Hardware	2103.11.6
A 167—96	Specification for Stainless and Heat-Resisting Chromium-nickel Steel Plate, Sheet and Strip	2103.11.5, 2103.11.6
A 185—97	Specification for Steel Welded Wire Fabric, Plain for Concrete Reinforcement	2103.11.4, 2103.11.5
A 252—98	Specification for Welded and Seamless Steel Pipe Piles	1808.3.1, 1809.6.1
A 283/A 283M—98	Specification for Low and Intermediate Tensile Strength Carbon Steel Plates	1808.3.1, 1809.6.1
A 307—97	Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength	1912.1
A 366/A366M—97	Specification for Commercial Steel (CS) Sheet Carbon (0.15 maximum percent)	2103.11.5
A 416/416M—99	Specification for Steel Strand, Uncoated Seven-wire for Prestressed Concrete	1808.2.3.1
A 496—97a	Specification for Steel Wire, Deformed for Concrete Reinforcement	2103.11.3, 2103.11.4
A 572/A 572M—97c	Specification for High-strength Low-alloy Columbian-vanadium Structural Steel	1808.3.1
A 588/A 588M—97a	Specification for High-strength Low-alloy Structural Steel with 50 ksi (345 Mpa) Minimum Yield Point to 4 inches (102 mm) Thick	1808.3.1
A 615M—96a	Specification for Deformed and Plain Billet-steel Bars for Concrete Reinforcement	1908.1.8, 2103.11.1
A 616/A 616M—96a	Specification for Rail-Steel Deformed and Plain Bars for Concrete Reinforcement	2103.11.1
A 617/A 617M—96a	Specification for Axle-steel Deformed and Plain Bars for Concrete Reinforcement	2103.11.1
A 641—98	Specification for Zinc-coated (Galvanized)Carbon Steel Wire	2103.11.6
A 653/A 653M—97a	Specification for Steel Sheet, Zinc-coated or Zinc-coated (Galvanized or Zinc-iron Alloy-Coated) by the Hot-dip Process	Table 1507.4.3, 2211.2.1, 2211.5
A 706/A 706M—98	Specification for Low-alloy Steel Deformed and Plain Bars for Concrete Reinforcement	1903.5.2, 1908.1.8, 2103.11.1
A 755/A 755M—96	Specification for Steel Sheet, Metallic-coated by the Hot-dip Process and Prepainted by the Coil-coating Process for Exterior Exposed Building Products	Table 1507.4.3
A 767/A 767M—97	Specification for Zinc-coated (Galvanized) Steel Bars for Concrete Reinforcement	2103.11.1
A775/A 775M—97	Specification for Epoxy-coated Reinforcing Steel Bars	2103.11.1
A 792/A 792M—97a	Specification for Steel Sheet, 5% Aluminum-zinc Alloy-coated by the Hot-dip Process	Table 1507.4.3, 2211.2.1, 2211.5
A 875M—97a	Specification for Steel Sheet Zinc-54° Aluminum Alloy-Coated by the Hot Dip Process	2211.2.1, 2211.5
A 913/A913M—97	Specification for High-strength Low-alloy Steel Shapes of Structural Quality, Produced by Quenching and Self-tempering Process (QST)	1808.3.1
A 951—98	Specification for Masonry Joint Reinforcement	2103.11.2, 2103.11.6
B 42—98	Specification for Seamless Copper Pipe, Standard Sizes	909.13.1
B 43—98	Specification for Seamless Red Brass Pipe, Standard Sizes	909.13.1
B 68M—95	Specification for Seamless Copper Tube, Bright Annealed [METRIC]	909.13.1
B 88—96	Specification for Seamless Copper Water Tube	909.13.1
B 101—96	Specification for Lead-coated Copper Sheet and Strip for Building Construction	Table 1507.4.3
B 251—97	Specification for General Requirements for Wrought Seamless Copper and Copper-alloy Tube	909.13.1
B 280—98	Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service	909.13.1
B 633—98 (Reapproved 1994)	Specification for Electodeposited Coatings of Zinc on Iron and Steel	2211.2
C 5—98	Specification for Quicklime for Structural Purposes	Table 2507.2
C 22/C 22M—96	Specification for Gypsum	Table 2506.2
C 27—98	Specification for Standard Classification of Fireclay and High-alumina Refractory Brick	2111.5, 2111.8
C 28—96	Specification for Gypsum Plasters	Table 2507.2
C 31/31M—96	Standard Practice for Making and Curing Concrete Test Specimens in the Field	1905.6.3.2, 1905.6.4.2
C 33—97	Specification for Concrete Aggregates	720.3.1.4, 720.4.1.1.3, Table 1904.2.1
C 34—96	Specification for Structural Clay Load-bearing Wall Tile	2103.2
C 35—95	Specification for Inorganic Aggregates for Use in Gypsum Plaster	Table 2507.2
C 36—97	Specification for Gypsum Wallboard	Figure 720.5.1(3), Table 720.5.1(2), Table 2506.2
C 37—95	Specification for Gypsum Lath	Table 2507.2
C 39—96	Standard Test Method for Compressive Strength of Cylindrical Specimens	1905.6.3.2

ASTM—continued

C 42—94	Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete	1905.6.5.2
C 55—97	Specification for Concrete Brick	Table 720.3.2, 2103.1, 2105.2.2.1.2
C 56—96	Specification for Structural Clay Non-load Bearing Tile	2103.2
C 59—95	Specification for Gypsum Casting and Molding Plaster	Table 2507.2
C 61—95	Specification for Gypsum Keene's Cement	Table 2507.2
C 62—97a	Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)	2103.2, 2105.2.2.1.1
C 67—98	Standard Test Methods of Sampling and Testing Brick and Structural Clay Tile	720.4.1.1.1, 1507.3.5, 2104.5, 2105.2.2.1.1, 2109.8.1.1
C 73—99	Specification for Calcium Silicate Face Brick (Sand-lime Brick)	Table 720.3.2, 2103.1
C 79M—97	Specification for Treated Core and Non-treated Core Gypsum Sheathing Board	Table 2506.2
C 90—99	Specification for Loadbearing Concrete Masonry Units	Table 720.3.2, 1805.5.2, 2103.1, 2105.2.2.1.2
C 91—97	Specification for Masonry Cement	Table 2103.7(1), Table 2507.2
C 94—98	Specification for Ready-mix Concrete	1905.8.2
C 126—96	Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units	2103.2
C 140—98	Standard Test Method Sampling and Testing Concrete Masonry Units	720.3.1.2, 1507.3.5, 2105.2.2.1.2
C 150—97a	Specification for Portland Cement	1904.1, Table 1904.2.3, Table 2103.7(1), Table 2507.2
C 172—97	Standard Practice for Sampling Freshly Mixed Concrete	1905.6.3.1
C 199—84 (Reapproved 1994)	Standard Test Method for Pier Test for Refractory Mortars	2111.5, 2111.8, 2113.12
C 206—84 (1997)	Specification for Finishing Hydrated Lime	Table 2507.2
C 212—96	Specification for Structural Clay Facing Tile	2103.2
C 216—98	Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)	2103.2, 2105.2.2.1.1
C 270—99	Specification for Mortar for Unit Masonry	2103.7, Table 2103.7(2), 2105.4
C 315—98b	Specification for Clay Flue Linings	2113.11.1, Table 2113.16(1), Table 2113.16(2)
C 317—93a	Specification for Gypsum Concrete	1915.1
C 330—97	Specification for Lightweight Aggregates for Structural Concrete	702.1, 1905.1.4
C 331—98	Specification for Lightweight Aggregates for Concrete Masonry Units	720.3.1.4, 720.4.1.1.3
C 406—89 (1996)	Specification for Roofing Slate	1507.7.4
C 442—97 (1988)	Specification for Gypsum Backing Board and Coreboard	Table 2506.2
C 472—93	Specification for Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete	Table 2506.2
C 473—97	Specification for Standard Test Method for Physical Testing of Gypsum Panel Products	Table 2506.2
C 474—97	Standard Test Methods for Joint Treatment Materials for Gypsum Board Construction	Table 2506.2
C 475—94	Specification for Joint Compound and Joint Tape for Finishing Gypsum Board	Table 2506.2
C 476—99	Specification for Grout for Masonry	2103.10, 2105.2.2.1.1, 2105.2.2.1.2
C 503—97	Specification for Marble Dimension Stone (Exterior)	2103.3
C514—96	Specification for Nails for the Application of Gypsum Board	Table 719.1(2), Table 719.1(3), Table 2306.4.5, Table 2506.2
C 516—80 (1990)	Specifications for Vermiculite Loose Fill Thermal Insulation	720.3.1.4, 720.4.1.1.3
C 547—95	Specification for Mineral Fiber Pipe Insulation	Table 719.1(2), Table 719.1(3)
C 549—81 (1995)	Specification for Perlite Loose Fill Insulation	720.3.1.4, 720.4.1.1.3
C 557—93a	Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing	Table 2506.2
C 568—96	Specification for Limestone Dimension Stone	2103.3
C 587—97	Specification for Gypsum Veneer Plaster	Table 2507.2
C 588—95a	Specification for Gypsum Base for Veneer Plasters	Table 2507.2
C 595—95a	Specification for Blended Hydraulic Cements [METRIC]	1904.1, Table 1904.2.3, Table 2103.7(1), Table 2507.2
C 615—96	Specification for Granite Dimension Stone	2103.3
C 616—97	Specification for Quartz-based Dimension Stone	2103.3
C 618—97	Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete	1904.1, Table 1904.2.3
C 629—97	Specification for Slate Dimension Stone	2103.3
C 630/C 630M—96a	Specification for Water-resistant Gypsum Backing Board	Table 2506.2
C 631—95a	Specification for Bonding Compounds for Interior Gypsum Plastering	Table 2507.2
C 635—97	Specification for the Manufacturer, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings	803.8.1.1, 2506.2.1
C 636—96	Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels	803.8.1.1
C 645—99	Specification for Non-load (Axial) Bearing Steel Studs, Runners (Tracks) and Rigid Furring Channels for Screw Application of Gypsum Board	Table 2506.2, Table 2507.2
C 652—97	Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale)	2103.2, 2105.2.2.1.1
C 685—98a	Specification for Concrete Made by Volumetric Batching and Continuous Mixing	1905.8.2
C 744—98	Specification for Prefaced Concrete and Calcium Silicate Masonry Units	2103.1

EWA—continued

EWS S560—99	Field Notching and Drilling of Glued Laminated Timber Beams	2306.1
EWS T300—99	Glulam Connection Details	2306.1
EWS X440—98	Product and Application Guide	2306.1
EWS X445—97	Glulam in Residential Construction — Southern Edition	2306.1
EWS X450—97	Glulam in Residential Construction — Western Edition	2306.1

FEMA

Federal Emergency Management Agency
Federal Center Plaza
500 C Street S.W.
Washington, DC 20472

Standard reference number	Title	Referenced in code section number
FEMA 302	NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures	Figure 1615(7), Figure 1615(8), Figure 1615(9), Figure 1615(10)

FM

Factory Mutual
Standards Laboratories Department
1151 Boston-Providence Turnpike
Norwood, MA 02062

Standard reference number	Title	Referenced in code section number
4450—90	Approval Standard for Class 1 Insulated Steel Deck Roofs—with Supplements thru 7/92	1504.3.1, 1508.1, 2603.3, 2603.4.1.5
4470—86	Approval Standard for Class 1 Roof Coverings—with Supplements thru August 1992	1504.3.1, 1504.6
4880—94	Approval Standard for Class 1:a) Insulated Wall or Wall and Roof/Ceiling Panels, b) Plastic Interior Finish Materials, c) Plastic Exterior Building Panels, d) Wall/Ceiling Coating Systems and e) Interior or Exterior Finish Systems	2603.4, 2603.7

GA

Gypsum Association
810 First Street N.E. #510
Washington, DC 20002-4268

Standard reference number	Title	Referenced in code section number
GA 216—96	Application and Finishing of Gypsum Board	Table 2508.1, 2509.2
GA 600—97	Fire-resistance Design Manual, 15th Edition, April, 1997	Table 719.1(1), Table 719.1(2), Table 719.1(3)

HPVA

Hardwood Plywood Veneer Association
1825 Michael Faraday Drive
Reston, VA 20190-5350

Standard reference number	Title	Referenced in code section number
HPVA HP-1—94	The American National Standard for Hardwood and Decorative Plywood	2303.3, 2304.6.2

ICC

International Code Council
5203 Leesburg Pike, Suite 600
Falls Church, VA 22041

Standard reference number	Title	Referenced in code section number
ICC A 117.1—98	Accessible and Usable Buildings and Facilities	406.2.2, 907.9.1.3, 1003.2.13.5.5, 1003.3.4, 1003.3.4.5.5, 1003.3.4.8, Comm 62.1100-62.1110, 1405.10.4, 1607.7, 3001.3, 3408.5, 3408.7.1, 3408.7.2
EC—2000	ICC Electrical Code™	904.3.1, 907.5, 909.11, 909.12.1, 909.16.3, 1003.2.10.5, 1003.2.11.2, 1204.4.1, 1405.10.4, 2701.1, 2702.1
IECC—2000	International Energy Conservation Code®	1202.3.2, 1301.1.1, 1403.2
IFC—2000	International Fire Code®	102.6, 307.2, 307.9, Table 307.7(1), Table 307.7(2), 403.8, 404.2, 406.5.1, 410.3.7, 411.1, 412.4.1, 413.1, 414.1.1, 414.1.2, 414.2.4, Table 414.2.4, 414.3, 414.5, 414.5.1, Table 414.5.1, 414.5.2, 414.5.4, 414.5.5, 414.6, 415.1, 415.3, Table 415.3.1, 415.7, 415.7.1, 415.7.1.4, 415.7.2, 415.7.2.3, 415.7.2.5, 415.7.2.7, 415.7.2.8, 415.7.2.9, 415.7.3, 415.7.3.3.3, 415.7.3.5, 415.7.4, 415.8, 415.9.1, 415.9.2.7, 415.9.5.1, 415.9.7.2, 704.8.2, 901.2, 901.3, 901.5, 903.2.6.1, 903.2.13, Table 903.2.15, 903.5, 904.2.1, 905.1, 906.1, 907.2.5, 907.2.12.2, 907.2.14, 907.2.16, 907.19, 909.20, 910.2.3, Table 910.3, 1001.3, 1202.4.2, 1202.5, 2702.2.8, 2702.2.10, 2702.2.11, 2702.3, 2702.12, 3102.1, 3103.1
IFGC—2000	International Fuel Gas Code®	201.3, 307.9, 415.7.3, 2113.11.2, 2801.1
IMC—2000	International Mechanical Code®	201.3, 307.9, 406.4.2, 406.6.3, 409.3, 412.4.6, 414.1.2, 414.3, 415.7.1.4, 415.7.2, 415.7.2.8, 415.7.3, 415.7.4, 415.9.11.1, 416.3, 603.1, 707.2, 715.2.2, 715.5.4, 715.6.1, 715.6.2, 715.6.3, 716.5, 718.1, 903.2.14.1, 904.2.1, 908.6, 909.1, 909.10.2, 1004.3.2.4, 1007.3, 1202.1, 1202.2.1, 1202.4.2, 1202.4.2.1, 1202.5, 1208.3, 2304.5, 2801.1, 3004.3.1
IPC—2000	International Plumbing Code®	102.6, 201.3, 415.7.4, 716.5, 903.3.5, 1205.3.3, 1503.4, 1611.1, 1806.4.3, 2901.1
IPMC—2000	International Property Maintenance Code®	102.6
IPSDC—2000	International Private Sewage Disposal Code®	2901.1
IRC—2000	International Residential Code®	2113.15
SBCCI SSTD 7—99	Standard for Soil Expansion Index Test	1802.3.2
SBCCISSTD 10—99	Standard for Hurricane Resistant Residential Construction	1609.1.1, 2308.2.1
SBCCISSTD 11—97	Test Standard for Determining Wind Resistance of Concrete or Clay Roof Tiles	1715.2.1, 1715.2.2
SBCCI SSTD 12—97	Standard for Determining Impact Resistance fromWindborne Debris	1609.1.1
UBC Standard 18—2	Expansion Index Test	1802.3.2
UBC 26-4—97	Method of Test for the Evaluation of Flammability Characteristics of Exterior, Nonload-Bearing Wall Panel Assemblies Using Foam Plastic Insulation	2603.5.5

NAAMM

National Association of Architectural
Metal Manufacturers
8 South Michigan Ave
Chicago, IL 60603

Standard reference number	Title	Referenced in code section number
NAAMM 1001—90	Guide Specifications for Design of Metal Flag Poles	1609.1.1

NBS

National Bureau of Standards
U.S. Department of Commerce
Superintendent of Documents
Government Printing Office
Washington, DC 20401

Standard reference number	Title	Referenced in code section number
BMS 71—41	Fire Tests of Wood and Metal-framed Partitions	720.7
TRBM-44—46	Fire-resistance and Sound-insulation Ratings for Walls, Partitions and Floors	720.7

NCMA

National Concrete Masonry Association
2302 Horse Pen Road
Herndon, VA 22071-3499

Standard reference number	Title	Referenced in code section number
NCMA—TEK 5-8 (1978)	Design Details for Concrete Masonry Fire Walls	Table 719.1(2)

NEMA

National Electrical Manufacturers Association
2101 L Street, N.W., Suite 300
Washington, DC 20037

Standard reference number	Title	Referenced in code section number
NEMA—250—97	Enclosures for Electrical Equipment (1000 volts, Max)	1621.3.13.1
NEMA ICS 6—93	Industrial Control and System Enclosures	1621.3.13.1

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02269-9101

Standard reference number	Title	Referenced in code section number
NFPA 11—98	Low Expansion Foam	904.7
NFPA 11A—99	Medium- and High-expansion Foam Systems	904.7
NFPA 12—98	Carbon Dioxide Extinguishing Systems	904.8, 904.11
NFPA 12A—97	Halon 1301 Fire Extinguishing Systems	904.9
NFPA 13—99	Installation of Sprinkler Systems [Comm 62.3500 (1)]	704.12, 707.2, 903.3.1.1, 903.3.2, 903.3.5.1.1, 904.11, 907.8, 1621.3.10.1, 3104.5, 3104.9
NFPA 13D—96	Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes	903.1.2, 903.3.1.3, 903.3.5.1.1
NFPA 13R—99	Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height	903.1.2, 903.3.1.2, 903.3.5.1.1, 903.3.5.1.2, 903.4
NFPA 14—96	Standpipe and Hose System	905.2, 905.3.2, 905.3.5, 905.4.2, 905.8
NFPA 16—99	Installation of Deluge Foam-water Sprinkler and Foam-water Spray Systems	904.7, 904.11
NFPA 17—98	Dry Chemical Extinguishing Systems	904.6, 904.11
NFPA 17A—98	Wet Chemical Extinguishing Systems	904.5, 904.11
NFPA 30—00	Flammable and Combustible Liquids Code	307.9, 415.3
NFPA 30B—98	Manufacture and Storage of Aerosol Products	307.9
NFPA 32—96	Dry Cleaning Plants	415.7.4
NFPA 33—00	Spray Application Using Flammable or Combustible Materials	307.9, 416.1
NFPA 34—00	Dipping and Coating Processes Using Flammable or Combustible Liquids	307.9, 416.1
NFPA 40—97	Storage and Handling of Cellulose Nitrate Motion Picture Film	409.1
NFPA 61—95	Prevention of Fires and Dust Explosions in Agricultural Food	415.7.1
NFPA 65—93	Processing & Finishing of Aluminum	415.7.1
NFPA 72—99	National Fire Alarm Code [Comm 62.3500 (1)]	505.4, 901.6, 903.4.1, 904.3.5, 907.2, 907.2.1, 907.2.1.1, 907.2.10, 907.2.10.4, 907.2.11.2, 907.2.11.3, 907.2.12.2.3, 907.2.12.3, 907.4, 907.5, 907.9.2, 907.10, 907.14, 907.16, 907.17, 909.12, 909.12.3, 911.1, 3006.5
NFPA 80—99	Fire Doors and Fire Windows	302.1.1.1, 714.2, 714.2.6.1, 714.2.7.2, 714.3, 714.3.3, 1003.3.1.3.3
NFPA 96—98	Ventilation Control and Fire Protection of Commercial Cooking Operations	904.11
NFPA 101—97	Code for Safety to Life from Fire in Buildings and Structures	1008.5.2
NFPA 102—95	Assembly Seating, Tents and Membrane Structures	Table 1607.1
NFPA 110—99	Emergency and Standby Power Systems	2702.1
NFPA 111—96	Stored Electrical Energy Emergency and Standby Power Systems	2702.1
NFPA 120—99	Coal Preparation Plants	415.7.1
NFPA 204—98	Guide for Smoke and Heat Venting	3104.11
NFPA 231C—98	Rack Storage of Materials	507.2
NFPA 252—95	Standard Methods of Fire Tests of Door Assemblies	714.2.1, 714.2.2, 714.2.3, 714.2.4.1

NFPA—continued

NFPA 253—95	Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Heat Source	804.2, 804.3
NFPA 257—96	Standard on Fire Test for Window and Glass Block Assemblies	714.2.3, 714.3, 714.3.1
NFPA 259—98	Test Method for Potential Heat of Building Materials	2603.4.1.10, 2603.5.3
NFPA 265—98	Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings	803.5.1
NFPA 268—96	Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source	1406.2.1, 1406.2.1.1, 1406.2.1.2, 2603.5.7
NFPA 285—98	Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Nonloadbearing Wall Assemblies Containing Combustible Components Using the International Scale, Multistory Test Apparatus	2603.5.5
NFPA 409—95	Standard on Aircraft	412.2.6, 412.4.5
NFPA 418—95	Standard for Heliports	412.5.6
NFPA 651—98	Manufacture of Aluminum Powder	415.7.1
NFPA 654—97	Prevention of Fire & Dust Explosions in the Chemical, Dye, Pharmaceutical, Plastics, and Industries	415.7.1
NFPA 655—93	Prevention of Sulfur Fires and Explosions	415.7.1
NFPA 664—98	Prevention of Fires Explosions in Wood Processing and Woodworking Facilities	415.7.1
NFPA 701—96	Methods of Fire Test for Flame-resistant Textiles and Films	802.1, 805.1, 805.2, 3102.3.1, 3105.3
NFPA 704—96	Standard System for the Identification of the Hazards of Materials for Emergency Response	414.7.2, 415.2
NFPA 750—96	Standard on Water Mist Fire Protection Systems [Comm 62.3500 (2)]	Comm 62.0904(1)
NFPA 1124—98	Manufacture, Transportation, and Storage of Fireworks and Pyrotechnic Articles	415.3.1
NFPA 1963—98	Fire Hose Connections	903.3.6, 905.1
NFPA 2001—96	Standard on Clean Agent Fire Extinguishing Systems	904.10
NFPA 8503—97	Pulverized Fuel Systems	415.7.1

PCI

Precast Prestressed Concrete Institute
175 W. Jackson Boulevard, Suite 1859
Chicago, IL 60604-9773

Standard reference number	Title	Referenced in code section number
MNL124—1977	Design for Fire Resistance of Precast Prestressed Concrete	720.2.3.1

PTI

Post-Tensioning Institute
1717 W. Northern Avenue, Suite 114
Phoenix, AZ 85021

Standard reference number	Title	Referenced in code section number
PTI—1996	Design and Construction of Post-tensioned Slabs-on-ground, 2nd Edition	1805.8.2

RMA

Rubber Manufacturers Association
1400 K. Street, N.W. #900
Washington, DC 20005

Standard reference number	Title	Referenced in code section number
RP-1—90	Minimum Requirements for Non-reinforced Black EPDM Rubber Sheets	1507.12.2
RP-2—90	Minimum Requirements for Fabric-reinforced Black EPDM Rubber Sheets	1507.12.2
RP-3—85	Minimum Requirements for Fabric-reinforced Black Polychloroprene Rubber Sheets	1507.12.2
RMA/SPRI RP-4—1988	Wind Design Guide for Ballasted Single-ply Roofing Systems	1504.4